

## RJAH PCL (Autograft or Allograft) Reconstruction Guide

Patient Details:

Co-morbidity:

Note to Therapist:

*\*This is a guide to progression, not an exhaustive list of rehabilitation and does not replace clinical reasoning.*

*\*Treat any soft tissue symptoms on their merit.*

*\*Objective Tests can be used as an indication for progression.*

*\*Special Instruction(s) includes specific post-operative advice for the individual patient based on their surgeon's recommendation (as applicable). This will be completed on discharge or follow-up clinic appointments.*

PHASE OF REHABILITATION	IDEAL CRITERIA	REHABILITATION GUIDE	GOALS	OBJECTIVE TEST	SPECIAL INSTRUCTION
<p><b>PHASE 1</b></p> <p><b>From Day 1</b></p>	<ul style="list-style-type: none"> <li>○ Successful operative outcome.</li> <li>○ Adequate pain relief.</li> <li>○ Understands post-op instructions.</li> </ul>	<ul style="list-style-type: none"> <li>• Cryocuff/Ice.</li> <li>• Patella mobilisations.</li> <li>• H and calf stretches [care if H graft].</li> <li>• Ankle Exercises (e.g. heel raises).</li> <li>• SQ progressing to SLR.</li> <li>• Prone SLR.</li> <li>• Abduction/ Adduction exercises.</li> <li>• Weight transferring.</li> <li>• Elbow crutches for comfort.</li> </ul>	<ol style="list-style-type: none"> <li>1. Reduce inflammation.</li> <li>2. Gain terminal E.</li> <li>3. Promote distal circulation.</li> <li>4. Increase confidence.</li> <li>5. Promote early mobility.</li> </ol>		<p><b>Brace locked at 0° (Avoid HE)</b></p>

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<b>PHASE 2</b> <b>From Week 1</b>	<ul style="list-style-type: none"> <li>○ Full active and passive E.</li> <li>○ Mobilise independently +/- aids.</li> </ul>	<ul style="list-style-type: none"> <li>• Gradually increase weight-bearing.</li> <li>• Independent gait re-education.</li> <li>• SKB, facilitate ideal biomechanical alignment.</li> <li>• Low step-touch → step-up.</li> <li>• Proprioception exercises.</li> <li>• Active OKC Q.</li> <li>• Early protected CKC exercises &lt;45°F.</li> <li>• Other muscle groups not to be neglected.</li> <li>• Upper body active exercise → resis/reps/sets/speed.</li> </ul>	<ol style="list-style-type: none"> <li>1. Promote early function.</li> <li>2. Increase ROM.</li> <li>3. Encourage FWB.</li> <li>4. Improve muscular control.</li> </ol>	<p>AROM.</p> <p>PROM.</p> <p>SLR.</p> <p>Effusion.</p>	<p><b>Gradually increase ROM of the hinged brace, up to 90°F.</b></p> <p><b>Limit to 60°F during active and resisted exercises.</b></p> <p><b>Avoid OKC H.</b></p>

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<p><b>PHASE 3</b></p> <p><b>From Week 4</b></p>	<ul style="list-style-type: none"> <li>○ Minimal discomfort.</li> <li>○ FWB.</li> <li>○ SLR with no lag.</li> <li>○ AROM = Full E - <math>\geq 60^\circ</math>.</li> </ul>	<ul style="list-style-type: none"> <li>● Gait with predictable changes in direction</li> <li>● Prone auto-over press F → develop into Q stretch.</li> <li>● Mini-squats → heel raise.</li> <li>● Inner range lunges, facilitate ideal biomechanical alignment.</li> <li>● Bridging, double footed → single leg → step → gymball.</li> <li>● Arabesque exercises with support → increasing weight held out in front.</li> <li>● Proprioception → single leg stance/wobble boards/Trampette/crash mats/etc.</li> <li>● Gymball and Theraband work.</li> <li>● Lower body active exercise [exception of OKC H. Respect Q or H graft site as applicable] → resis/reps/sets/speed.</li> <li>● Muscle balance exercises as appropriate.</li> <li>● Core stability exercises as appropriate.</li> <li>● Flexibility exercises as appropriate.</li> <li>● Static bike or turbotrainer, no resis.</li> <li>● Rowing, no resis.</li> <li>● X-Trainer, no reis.</li> </ul>	<ol style="list-style-type: none"> <li>1. Progress functional activities.</li> <li>2. Prevent AKP.</li> <li>3. Prevent scar adherence.</li> <li>4. Prevent joint stiffness.</li> <li>5. Restore normal gait pattern.</li> <li>6. Promote appropriate muscle strength, power and endurance.</li> <li>7. Improve neuromuscular/ proprioception/ sensorimotor performance.</li> <li>8. Maintain cardiovascular fitness.</li> <li>9. Encourage patient compliance.</li> </ol>	<p>Single Leg Stance.</p> <p>Clam.</p> <p>Planks.</p>	<p><b>No limit to PROM.</b></p> <p><b>Limit to 60°F during active and resisted exercises.</b></p> <p><b>Avoid OKC H</b></p>

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<b>PHASE 3</b> <b>From Week 6</b>	<ul style="list-style-type: none"> <li>○ Normal symmetrical gait.</li> <li>○ Full PROM.</li> <li>○ No/minimal effusion</li> <li>○ Single leg stance ≥80% parity.</li> <li>○ Clams 10 reps with 10 sec hold ideal control [L] &amp; [R].</li> <li>○ Directional Planks 30 sec hold ideal control.</li> </ul>	<ul style="list-style-type: none"> <li>○ Step-ups (for/back/sideways/over) → height/reps/speed.</li> <li>○ PWB (parallel bars) jumps, hops, leaps. Facilitate ideal alignment and control. Aim to progress to FWB by Week 10.</li> </ul> <p><i>Sequencing of training:</i></p> <ul style="list-style-type: none"> <li>○ Train strength and endurance 3 – 4 x per week</li> <li>○ Train strength and endurance on separate days</li> <li>○ Have a minimum of 24 hours between strength days</li> <li>○ <i>Strength:</i> 10 – 20 min CV warm-up (exception of jogging/running) Choose a load 1 – 12 RM Choose numbers of sets and rest time between sets Alternate upper/lower body exercises within session Moderate to fast speed under control Vary load/set/rest between sessions [include resis. OKC H from week 10] Adjust if necessary based on symptoms</li> <li>○ <i>Endurance:</i> Gradually progress toward ≥45 min continuous CV exercise (exception of jogging/running) Choose a load 15 – 20 RM Choose numbers of sets and rest time between sets Alternate upper/lower body exercises within session Moderate to fast speed under control Vary load/set/rest between sessions [include resis. OKC H from Week 10] Adjust if necessary based on symptoms.</li> </ul>	<ol style="list-style-type: none"> <li>1. Promote appropriate strength, power and endurance based on individual's needs.</li> <li>2. Improve neuromuscular performance.</li> <li>3. Increase confidence.</li> </ol>	<p>Single Leg Squat 60°.</p> <p>AROM</p>	<p><b>Gradually wean off brace by <i>Week 8, if isolated PCL.</i></b></p> <p><b>Gradually wean off brace by <i>Week 12, if combined PCL and post-lateral corner procedure was performed.</i></b></p> <p><b>No limit to AROM.</b></p> <p><b>Limit resisted OKC H until <i>Week 10.</i></b></p>

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<p><b>PHASE 4</b></p> <p><b>From Week 12</b></p>	<ul style="list-style-type: none"> <li>○ Single Leg Squat 60° 5 sec hold with good alignment.</li> <li>○ Solid end point to reverse Lachman's and LCL test.</li> <li>○ Full AROM.</li> </ul>	<ul style="list-style-type: none"> <li>• Standing leg curls, progressing to "Heel flicks".</li> <li>• Ecc H, e.g. Nordic curls.</li> <li>• Progress to single footed plyometrics as dictated by control.</li> <li>• Introduce jogging → running when strength and control is adequate.</li> <li>• Dynamic hydrotherapy.</li> <li>• Advance dynamic proprioceptive exercises e.g. volleying football, throwing, catching, racket and ball while balancing on Trampette,</li> </ul>	<p>1. Sport specific function.</p>	<p>Tuck Jump.</p> <p>5 RM.</p> <p>Hop for Distance.</p>	
<p><b>Phase 5</b></p> <p><b>From Week 24</b></p>	<ul style="list-style-type: none"> <li>○ Tuck Jump ≥ 60% quality</li> <li>○ 5 RM &gt; 80% parity</li> <li>○ Hop for distance &gt;80% parity.</li> <li>○ Proprioception 90% parity.</li> </ul>	<ul style="list-style-type: none"> <li>• Add agility drills when sufficient control and confidence is achieved e.g. twist/turn/pivot/cut/accelerate/decelerate/direction</li> <li>Progress from predictable agility to unpredictable</li> <li>• Perturbation training e.g. therapist randomly nudges patient off balance during a single leg throw-catch drill</li> </ul>	<p>1. As PHASE 4.</p>	<p>As PHASE 4.</p>	

**PHASE 6**  
**From Week 36**

- As PHASE 4.

- Non-contact sport specific training → terrain/volume/periodisation.

1. Prepare neuromuscular and psychological ability to return to unrestricted function.

As indicated for individuals goals.

**PHASE 7**  
**From Week 36+**

- All Tests > 90% parity.

- Contact sport specific training
- Earliest return to contact sport training
- Progress to full restriction free sports and activities [**dependent on Consultant opinion**]

1. Unrestricted confident function.
2. Injury prevention.

Full sporting Function.

Terminology Key:

Abd	Abduction	LCL	Lateral Collateral Ligament
Add	Adduction	OKC	Open Kinetic Chain
AKP	Anterior Knee Pain	PCL	Posterior Cruciate Ligament
AROM	Active Range of Movement	PWB	Partial Weight Bear
CV	Cardiovascular	PROM	Passive Range of Movement
E	Extension	Q	Quadriceps
Ecc	Eccentric	[R]	Right
EOR	End of Range	reps	Repetitions
F	Flexion	resis	Resistance
FWB	Full Weight Bear	RM	Repetition Maximum
H	Hamstrings	ROM	Range of Movement
IRQ	Inner Range Quadriceps	SLR	Straight Leg Raise
[L]	Left	SQ	Static Quadriceps

